

WHAT IS CLAIMED IS:

1. An optical pick-up actuator including:

a lens holder having a objective lens and tracking and focusing coils;

a frame which is connected to a predetermined fixed end portion through a shaft

and has a suspension means for supporting said lens holder; and

a magnetic circuit for tilting motion which drives said lens holder in a predetermined direction other than focusing and tracking directions.

2. An optical pick-up actuator of claim 1, wherein said magnetic circuit for tilting motion generates an magnetic field independent from that of the magnetic circuit for tracking and focusing and drives said lens holder in said predetermined direction other than the focusing and tracking directions by driving said frame.

3. An optical pick-up actuator of claim 1, wherein said frame is driven in magnetic fields for tilt motion such that said lens holder is driven in a predetermined direction.

4. An optical pick-up actuator of claim 1, wherein said magnetic circuit for tilting motion is provided with pairs of coil and magnet means for generating a magnetic fields such that said frame is driven in said predetermined direction according to the electric currents flowing along said coil means.

5. An optical pick-up actuator of claim 1, wherein said frame is driven in tilt motion through said shaft.

6. An optical pick-up actuator of claim 5, wherein said shaft is supported by a bearing means.

7. An optical pick-up actuator of claim 5, wherein said shaft is made of a rigid

material.

8. An optical pick-up actuator of claim 5, wherein said predetermined end portion is a yoke.

9. An optical pick-up actuator of claim 1, wherein said tilt motion occurs in radial and/or tangential direction(s).

10. An optical pick-up actuator of claim 1, wherein said frame is elastically supported onto a damper means made of rubber material.

11. An optical pick-up actuator including:

a lens holder suspended in a magnetic field by a suspension wire and having tracking and focusing coils and objective lens;

a frame which is connected to a predetermined fixed end portion through a shaft and has a suspension means for supporting said lens holder; and

a magnetic circuit for tilting motion comprised of a coil means for tilting motion mounted at both end portion of said frame and a magnet means cooperatively provided with said coil means for tilting motion thereby bending and twisting said shaft.

12. An optical pick-up actuator of claim 11, wherein said shaft is made of a rigid material.

13. An optical pick-up actuator of claim 11, wherein said tilt motion occurs in radial and/or tangential direction(s).

14. An optical pick-up actuator of claim 11, wherein said frame is elastically supported onto a damper means made of rubber material.

15. An optical pick-up actuator of claim 11, wherein said predetermined end portion is a yoke.

16. An optical pick-up actuator of claim 10, wherein said shaft is supported by a bearing means.